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THE AGRICULTURAL HISTORY SOCIETY

THE AGRICULTURAL HISTORY SOCIETY was organized in 1919 to promote interest, study, and research in the history of agriculture. It holds an annual meeting in Washington, D. C., in the spring or early summer. Through an affiliation agreement, it has a session and a dinner in connection with the annual meeting of the American Historical Association. At present the society has two hundred and seventy members.

Three volumes of *Agricultural History Society Papers* have been published in coöperation with the American Historical Association as part of its annual reports. These volumes have been distributed separately by the society.

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THE SPANISH CONTRIBUTION TO AMERICAN AGRICULTURE¹

By ARTHUR P. WHITAKER

Professor Dixon Ryan Fox, of Columbia University, has recently written a paper entitled "Culture in Knapsacks." Paraphrasing his title, we might call the present paper "Seed in Scabbards," for as Professor Fox discussed the cultural contributions of foreign soldiers in the United States, so the present paper deals with agricultural contributions incident to the Spanish Conquest of America. It was only at the outset, however, that these contributions were incidental, for Spanish agriculture soon gained a firm foothold in America, had an independent existence of its own, long outlived the Conquest, and indeed remains to-day the basis of Latin American agriculture, a century after the work of the conquistadores was undone by the Wars of Independence.

¹ Mr. Whitaker is associate professor of American history at Western Reserve University. He was born in Alabama. He received his bachelor's degree at the University of Tennessee (1915), and his master's degree (1917) and doctor's degree (1924) at Harvard University. In 1917 he was appointed Rhodes Scholar for Tennessee, but was prevented by the war from going into residence. During a part of 1919 he studied at the Sorbonne. In 1924 he received a two-year appointment as Amherst Memorial Fellow (Amherst College) and spent most of this time in research in the archives of Spain, France, and England. Before coming to Western Reserve University (1928), he taught at various places, including New York University, the Florida State College for Women and Vanderbilt University. His special field of study is the competing frontiers of Spain and the United States in the Old Southwest in the period 1783-1821. His publications include a book, *The Spanish-American Frontier, 1783-1795* (Houghton Mifflin Co., 1927), and several articles in the *Mississippi Valley Historical Review*, the *Hispanic American Historical Review*, and the *North Carolina Historical Review*. The paper here printed was read by Mr. Whitaker at the meeting of the Agricultural History Society at Indianapolis, Ind., December 29, 1928.

The transplanting of Spanish agriculture to America deserves more attention than it has received. Even Edward Gaylord Bourne in that splendid little book, *Spain in America*, barely mentions it; and yet the contemporary documents show that it played an important part in the plans and achievements of the Spanish government and of the conquerors themselves. If more attention were given this subject, it is to be hoped that the majority of people would form a juster idea of the nature and value of the Spanish régime in America. Scholars of course know better, but many people still entertain some curious misconceptions in regard to the history of Spain in the New World. At one extreme, there are those who conceive the conquest as pure romance, and would shudder at the thought that it may have had its bread-and-butter aspects. At the other extreme are those who think of the Conquest and its long aftermath as a period when merciless tyrants, bigoted inquisitors and insatiable gold-hunters waded across the length and breadth of the Americas through oceans of blood, burning, plundering, and giving no good thing in return for the rich harvest of gold and silver that they reaped. Nothing could be farther from the truth. From the very first the Spaniards began to transplant their culture, including of course its basic element, agriculture, to America. Along with soldier, priest, gold-miner and war-horse, the ships that sailed from Seville to the Indies bore the beasts of burden, the wheat, the sugarcane, the millwrights and the farm laborers of Old Spain to establish Spanish agriculture in the Indies; so that in the long run, Spain gave the New World far more than she got from it.

Within two years after the first landfall of Columbus, the Catholic monarchs had begun the work of transplantation, and the priceless volumes of Navarrete enable us to read the story of their effort in many of its curious details. I omit the war-horses taken by Columbus in 1493 as belonging to the strictly military equipment of the expedition; but perhaps we may regard the fifty brace of hens and six roosters sent to the Indies in 1494 as heralding the dawn of Spanish agriculture in the New World.² It was in 1495,

² Martín Fernández de Navarrete, *Colección de los Viajes y Descubrimientos* . . . (2nd ed., Madrid, 1859), II, 171. See also *ibid.*, I, 112 ff.

however, that the first comprehensive preparations were made for this great labor. Jacks, jennets, mares, cattle, pigs, sheep, rice, millet, farm laborers, gardeners, a millwright and a blacksmith were sent to the Indies.³ In the years that followed, the work was pressed with vigor, and by the end of the fifteenth century the Spaniards had made considerable progress with the transfer of their agricultural system to the Indies, to wit: they had sent thither a large variety of seeds, plants and domesticated animals; they had begun the transfer of the instruments of agriculture, such as flour mills, sugar refineries and irrigation; and they had established a liberal land system⁴ for the encouragement of agriculture, —a system that was superior in many respects to that of the Anglo-Americans. Finally, it was just at the turn of the century that this Neo-Hispanic system of agriculture was rounded out by a decree to the effect that, while the Indians must not be enslaved, they could and should be compelled to deal with the whites and to labor for them at a fair wage.⁵ If we add to this that military service was not required of the Indians (an exemption that probably did those people more harm than good), we can see that the assimilation of the Indian to the common type of European laborer, the serf, was virtually complete. By the beginning of the sixteenth century, therefore, the Spanish government had committed itself to the policy of extending its agricultural system bodily to the New World, and the basic elements of the new system (crops, domesticated animals, instruments, and land and labor laws) were already accumulated in the West Indies, whence the conquistadores were soon to swarm to the greater empire on the mainland, bearing with them that bucolic heritage.

With the conquests of Balboa, Cortés, Pizarro and others on the mainland, the Spaniards did not relax their effort to transplant and propagate their agriculture. It was indeed on the mainland that agricultural development followed most closely the original

³ *Ibid.*, II, 184-85, 203-08.

⁴ *Ibid.*, 239-41.

⁵ *Ibid.*, 331-33. On the subjects discussed in this paragraph see R. Altamira, *Historia de España* (Madrid, 1902), II, 502, and W. H. Prescott, *Ferdinand and Isabella* (New York, 1872), II, 485-86, 497-98.

peninsular pattern, for the plateau lands and uplands of Mexico and Peru resembled Old Spain far more closely in soil and climate than did the tropical islands of the West Indies.⁶ The conquistadores themselves aided in the labor of transfer powerfully and, in many cases, designedly. Pizarro and his companions-in-arms gave Peru its first horses, cattle and vineyards, and the wife of one of these companions is credited by tradition with the introduction of wheat. Perhaps the most striking instance of the solicitude of the conquistadores on this point is the well known letter of Hernan Cortés, written in 1524, in which he begged the king to give orders that the Casa de Contratación of Seville should not let any ship sail for the Indies without bringing in its cargo plants and seed.⁷ We have it on the authority of Professor Aiton, in his recent study of Antonio de Mendoza, that such an order was issued in 1532, and that the order required every ship to bring not only seed and plants, but also domesticated animals.⁸

The work of the first conquerors was continued by their successors, and Antonio de Mendoza, the first viceroy of New Spain, obtained splendid results in the period before the jealousy of the peninsular Spaniards led to extensive interference with the development of colonial agriculture. Mendoza encouraged the production of indigenous crops, such as cotton, maize and cacao; and under his patronage wheat and sugar, horses and mules, were introduced in large quantities, and many large ranches and plantations came into existence. Improved agricultural methods, labor-saving machinery, windmills and irrigation gave further stimulus to production, so that by 1535 New Spain was already exporting wheat to the West Indies and Tierra Firme, by 1546 the sugar crop was sufficient to keep many domestic sugar refineries busy, and the silk industry thrived. It was, however, in connection with cattle and sheep raising that Mendoza distinguished himself most notably. The Mixton War opened up vast stretches of

⁶ Cf. Carlos Pereyra, *La Obra de España en América* (Madrid [1920]), 145-53.

⁷ Altamira, *op. cit.*, III, 512.

⁸ A. S. Aiton, *Antonio de Mendoza* . . . (Durham, N. Ca., 1928), 109 and note 83.

grazing lands and the viceroy himself became one of the leading *rancheros* of the new region.⁹

In Peru also the pioneers of agriculture continually blazed new trails, and when the industrious chronicler of that kingdom, Father Bernabé Cobo, composed his history¹⁰ about the middle of the seventeenth century, he declared that, although most of the plants and animals of Spain had already been transported thither, the Peruvians of his day were still active in carrying the work to completion, and that an intelligent colonist never visited Spain without bringing back to Peru some new plant from the old country.¹¹ Each new plant, he continued, was carefully nurtured in its new home, and the day when it first reached maturity became a festival in the proud family of the individual who had brought it to Peru.

While much of this activity was due to the requirements of the conquerors' service of supply and to the necessity of economic self-sufficiency in a period of isolation, irregular communications and high freight rates, there is also another motive that was undoubtedly powerful. This was the sentimental one, the desire to be surrounded with familiar things. Faust, in his *German Element in the United States*, has shown how the German immigrants moving westward sought out in the new regions the soil and landscape that resembled most closely those of the region from which they had come. This was a powerful motive with the Spanish colonists in the New World, and they also desired to cultivate the soil and cover its surface with familiar plants and animals. One of the early chroniclers tells us that a favorite occupation with the conquistadores in their declining years, which were mostly spent on country estates won by their conquering swords, was to surround themselves with the plants and animals that they had loved in their childhood days in Spain. A better justification of our device, "Seed in Scabbards," could hardly be found.

⁹ *Ibid.*, 109-12.

¹⁰ El P. Bernabé Cobo, *Historia del Nuevo Mundo* (reprinted, Seville, 1890-95, 4 v., ed. Marcos Jiménez de Espada).

¹¹ *Ibid.*, II, 342, 345.

This is not the place (nor would there be time) for a catalogue of the plants and animals brought to the New World by the Spaniards. Those who are interested will find many curious details in various places,—in a preliminary paper written by my learned friend, Dr. James A. Robertson,¹² who also promises to give us some day an exhaustive study of the subject; in the suggestive little book by Carlos Pereyra, *The Work of Spain in America*,¹³ and in Father Cobo's *History of the New World*,¹⁴ which relates largely to Peru. The subject is one of great interest, and we should like very much to know precisely when, how and by whom each item was introduced into each part of America; but, as Dr. Robertson has shown, these are questions that it is extremely difficult to answer accurately. Even the industrious Cobo, who began his investigations in Peru early in the seventeenth century and talked with survivors of the earliest period of colonization, confessed his inability to obtain satisfactory information in many cases. His explanation of the difficulty, however, is really quite enlightening. He tells us that the various plants and animals were introduced by so many persons at so early a period that, after the lapse of only a few years, it was impossible to discover the name of the innovator and the date of the innovation.¹⁵ In other words, it is precisely because the transfer of Spanish agriculture to the New World was so prompt and so well-nigh complete that it is impossible to ascertain many of the details. It might be remarked in passing that a minute study of the Spanish archives would doubtless enable us to clear up many of the difficulties, and it would probably show that the order of 1532, requiring every ship sailing for the Indies to carry plants and

¹² James A. Robertson, "Some Notes on the Transfer by Spain of Plants and Animals to its Colonies Overseas," in *Studies in Hispanic-American History*, ed. W. W. Pierson, Jr. (Chapel Hill, N. Ca., 1927: James Sprunt Historical Studies, XIX, No. 2), 7-21.

¹³ See note 6 *ante*.

¹⁴ See note 10 *ante*. There is, of course, a great deal of information, more or less haphazard, to be found in the works of many of the early chroniclers. Special mention should be made of Father Joseph de Acosta, *The Natural and Moral History of the Indies* (English tr., London, printed for the Hakluyt Society, 1880, 2 v.).

¹⁵ Cobo, *op. cit.*, II, 341-42.

animals for propagation, was in large measure responsible for the rapid transfer of Spanish agriculture to the mainland; but such a study is still to be made.

In the present state of our knowledge, the difficulties are even greater than good Father Cobo thought they were. Let us take, for instance, one of the items about which he was satisfied that he had obtained precise and accurate information, namely, wheat. This is the curious story of its introduction into Peru, as Cobo tells it: In 1535, the discreet and virtuous lady, Inés Muñoz, was washing some rice recently brought from Spain, in order that she might make her lord and master a *guisado* of rice, which was regarded as a very great delicacy in Peru at that early day. While washing the rice, what was her surprise and joy to find among it a few grains of wheat! Carefully gathering the precious grains together, she planted them in a flower-pot and tended them as carefully as if they had been carnations or sweet-basil. In due time the grains sprouted and the wheat matured. Again the seeds were planted and solicitously tended until another crop was made. Soon the seeds were distributed and planted in open fields in the usual way, and in the next decade the price of flour fell rapidly in Peru.¹⁶

There, you see, we have an apparently authentic account with all the significant details precisely related,—the date, the name and the picturesque circumstances; and not only was the story (in slightly variant forms) generally accepted as the undoubted truth, but one of the chroniclers, Garcilaso de la Vega, went on to complain that whereas the ancients venerated Ceres as a goddess and honored her in regular festivals, the Spaniards of Peru had already forgotten the very name of their own Ceres. As a matter of fact, there is reason for believing that Cobo's Doña Inés has more in common with Ceres than he or any other of these early writers suspected; that, indeed, her story as related by Cobo belongs to the realm of folklore, for there is a closely analogous story about the introduction of wheat into Mexico, with the difference that here it was a negro servant of Cortés who dis-

¹⁶ *Ibid.*, 411-15. Cf. Robertson, *loc. cit.*, 14, 15, and A. von Humboldt, *Political Essay on New Spain* (London, 1811-22, 4 v., translated by John Black), II, 452.

covered the precious grains of wheat while washing Spanish rice to make his master a *guisado*. The close similarity of these two tales renders them both suspect,¹⁷ and the suspicion is strengthened when we recall the repeated efforts of the Spanish government to introduce wheat into the West Indies, the repeated requests of the conquistadores of the mainland for all kinds of seeds and plants, and the royal order of 1532 to the Casa de Contratación.

Leaving aside, as superfluous, an inquiry into the minutiae of the process, I shall simply remind you that by the end of the sixteenth century, the Spaniards had effected the transfer of practically all the paraphernalia of their agriculture to America; and, furthermore, that they were experimenting with the introduction of plants and animals from other parts of the world,—from the Canaries, Africa and Asia. An interesting experiment was made in the early days of Peru when, with horses costing fabulous sums, an enterprising Spaniard imported some camels from the Canary Islands. Considerable use was made of them for a while, but before many years had past, the rapid increase in the number of horses led the creoles to neglect the camels, while the Indians killed them for their meat. Towards the end of the sixteenth century an effort was made to preserve them from extinction, but careful search produced only two camels in the whole of Peru, and both of these were females. When the last of these died in 1615, the history of the Peruvian camel was ended.¹⁸ Another curiosity that we may mention was a breed of Chinese dog, also imported into Peru; but, as the chronicler quaintly remarks, these dogs had no hair and their skin was so much like that of a human being that it made one shudder with disgust to look at them; so they too suffered from the disesteem of the colonists.¹⁹ Cobo also pays a glowing tribute to the work of the Spanish cats, which aided in the subjugation of the New World and made it safe for agriculture by ending the insolent domination of the ubiqui-

¹⁷ Pereyra, *op. cit.*, 158-59. Garcilaso gave the name of the Ceres of Peru as María de Escobar, wife of Diego de Chaves.

¹⁸ Cobo, *op. cit.*, II, 442.

¹⁹ *Ibid.*, 443-44.

tous rats; but he does not give us the name of the Dick Whittington of Spanish America.²⁰—These apparently trivial instances are mentioned in order to give some idea of the wide range of Spanish importations into America and to show the experimental attitude of the Spaniards towards colonial agriculture. Open-mindedness and conscious adaptation were much more frequent in the Spanish colonial system than is commonly supposed.

The bulk of the Spanish contribution to American agriculture was made in the sixteenth century, but not the whole of it. We have already quoted Cobo's testimony to the continued activity of his fellow Peruvians in the seventeenth century, and it is probable that similar activity existed in other parts of the empire. It was, however, in the following century, during the Bourbon revival and especially under Charles III and IV, that Spain increased its contribution most notably. This was the age of Coke of Holkham, Turnip Townsend, Arthur Young and the French Physiocrats, and the agricultural reform movement spread to Spain and its colonies. This reform movement is all the more important because it coincided with a marked extension of the Spanish settlements and dominions in America,—in the viceroyalty of Buenos Ayres, in California and in the Mississippi Valley. The government patronised agriculture actively, intelligently and efficiently. Humboldt, writing about 1806, declared that no European government was spending more money than Spain to promote the study of plants (and most of it was spent in America), that Mexico had a remarkable botanical garden and a school of natural sciences that was at least as good as any in the United States, and that by these and other means, such as the building of roads and canals, the government was giving notable encouragement to agriculture.²¹

²⁰ *Ibid.*, 373.

²¹ *Mémoires du Prince de la Paix* (Paris, 1836, 4 v., ed. J. G. d'Esménard), III, 344-62. Godoy, defending himself and Charles IV against the charge of misgoverning the Spanish colonies, made the most of Humboldt's favorable comments on the Spanish colonial system in his *Essai politique sur la Nouvelle Espagne* (cited above in the English translation). See also for the subjects discussed in this paragraph Pereyra, *op. cit.*, 221-30, and G. Desdèvises du Dezert, "La Richesse et la Civilisation Espagnoles au XVIII^e Siècle," *Revue Hispanique*, LXIII, No 163 (June, 1928), 51-64.

To be sure, the picture would not be complete without an account of the Spanish restrictions on colonial agriculture. These were particularly numerous and burdensome in New Spain, where four promising sources of revenue (sheep-raising and the allied woolen industry, the silk industry, and the growth of vines and olive trees) were either discouraged or prohibited by the Spanish court, which acted under the influence of prevalent economic concepts and under the pressure of jealous peninsular Spaniards.²² Such measures, however, indicate the hostility of Spain not to agriculture in the colonies but to competition in the colonies; and thus viewed, Spanish policy finds a substantial parallel in the measures taken by the British government to suppress the iron and beaver hat industries in British North America. It should also be noted that these repressive measures of the Spanish court were not always enforced. Humboldt informs us that during his stay in Mexico the viceroy received orders to root up all the vines in the northern provinces because Cadiz merchants complained that exports of Spanish wines to Mexico were diminishing; but happily, Humboldt adds, this order like many others was never executed.²³ The repressions were, moreover, offset to some extent by the encouragement offered for the production of other articles; for instance, of tobacco, which was purchased for several years by the royal government at a price that amounted to a bounty. Lastly, the restrictions were not uniform, and Peru and the remoter provinces enjoyed more liberal treatment than Mexico.

There are of course many other topics that I should like to discuss, among them the relation of domestic to commercialised agriculture, and of colonial products to food stuffs; the rise of mercantilism in Spain and its effect upon colonial agriculture; and the Spanish physiocrats and their efforts in behalf of agriculture. The present sketch, however, must not be too ambitious, and must be content to remain a sketch. Nevertheless, no paper on such a subject, no matter how sketchy it may be, is complete

²² Bernard Moses, *Establishment of Spanish Rule in America* (New York, 1898), 284-86; Humboldt, *op. cit.*, II, 516-17.

²³ *Ibid.*, 517.

without a consideration of the question: Did they get results? No one can question that the Spanish government attempted, especially in the first and last half-centuries of the colonial period, to promote the development of American agriculture. No one can question that all kinds of plants and animals were sent in great numbers to America. No one can question that in one way or another the influence of Spanish agriculture was felt throughout America, not only in Spain's own possessions but also in the Anglo-American colonies (and later the States) to the northward.²⁴

All this we know, and yet we still wonder whether the good intentions of the Spanish government translated themselves into achievements, and whether it succeeded in establishing solid agricultural communities in its own colonies. We wonder, and skepticism is sharpened by the notorious failure of its beneficent Indian policy and by the knowledge that Philadelphia flour undersold Mexican flour in Havana at the end of the 18th century. Despite the excellent agricultural equipment of Old Spain at the time of the Conquest, and despite good intentions, did not the Spanish colonies in fact remain to the very end substantially a string of gold and silver mines and sugar plantations worked by a miserably oppressed, half-starved people? As you may have suspected, the answer to this rhetorical question is a good, round "No!" There are two tests that we can apply in order to obtain an answer to it. The first is the status of the farm laborers; the second, the relative importance of mining and agriculture as shown by the statistics of production and exportation. For information on both points we still have to rely largely on the works of Alexander von Humboldt, who happily visited New Spain just before the end of the Spanish period; and, since Spanish repression and exploitation were at their height in New Spain, we can assume, until we have evidence to the contrary, that, generally speaking, the state of agriculture was no worse in the rest of the Spanish colonies, and was probably better. As to the condition of the farm laborers, Humboldt was decidedly of the

²⁴ Lyman Carrier, *Beginnings of Agriculture in America* (New York, 1923), 109-12.

opinion that they were quite as well off as the farm laborers of Continental Europe; that while they were virtually in a state of serfdom, they had a larger share of the comforts of life than their European counterparts, many of whom indeed were still serfs.²⁵

On the second point (the relative importance of mining and agriculture), we learn that in the total volume of colonial exports, agricultural commodities very nearly equalled in value the products of the mines; and, if we go behind the statistics of export to those of domestic production, we find that the value of agricultural products was considerably in excess of that of mineral products. Again New Spain provides the statistics. Now it was in New Spain that gold and silver exports exceeded agricultural exports by the widest margin, and yet in this same country Humboldt concluded, after a careful analysis, that in the total domestic production agricultural commodities exceeded mineral products in value in the ratio of 96 to 74,—that is to say, even New Spain was preponderantly agricultural, but its agricultural produce was consumed for the most part at home.²⁶ Again, we repeat, since New Spain was an extreme case of mineral exploitation and agricultural restriction, it seems entirely reasonable to suppose that the preponderance of agriculture was even greater in the other colonies, and, consequently, that the Spanish government had met with substantial success in its secular effort to establish its agriculture on a firm basis in the New World. This of course is not to deny the existence of many defects and abuses.

In the present state of knowledge, we should not be justified in attempting a definite appraisal of the results of the transfer of Spanish agriculture to the New World. We know too little about Spanish agriculture and its transfer, and we know too little about the New World previous to the Conquest. The Maya culture was one of the two native American cultures that were most highly developed and that have been most carefully studied, and yet an eminent authority, writing in 1928, says: "As yet the scientific archaeological exploration of the Maya area is still in its infancy, and in that portion where the Old Maya culture is best

²⁵ Humboldt, *op. cit.*, II, 403-04; Desdévise du Désert, *loc. cit.*, 51-2.

²⁶ Humboldt, *op. cit.*, III, 98. Cf. Pereyra, *op. cit.*, 175-84.

developed has hardly even begun."²⁷ The same thing might be said of the Incas and of Spanish agriculture in the Old World and the New.

Our knowledge, then, is fragmentary; but, on the basis of what we do know, I should venture the opinion that, in respect to the cultural element with which we are concerned, namely agriculture, the Spaniards brought to the New World a much better system than the one that already existed there. According to some of the leading authorities, the culture of the North American Indians in its totality was degenerating at the time of the Conquest. Whether or not their whole culture, including agriculture, was degenerating, the superiority of the Spanish to the best of native American agriculture would seem to be unquestionable. As a recent writer has said: "Natural causes, in which we may include . . . a more abundant supply of animals . . . and plants suitable for domestication—these seem to have been the chief factors which predetermined that the development of human culture was to make more rapid progress in the Old than in the New World."²⁸ Whatever cultural elements the indigenous peoples of America may have possessed, they certainly lacked these priceless plants and animals, whose possession by the conquering Spaniards gives the Conquest high significance in the history of mankind. Whether or not Spanish beef and bananas put an end to cannibalism in America, as some writers say,²⁹ there can be no doubt that the coming of Spanish agriculture wrought a cultural revolution in the New World.

In conclusion, I wish to say a word about the possibilities of research in this field. As I have already tried to show you, but little systematic work has been done in connection with the many topics touched upon in the course of this rapid survey; and yet the theme is worthy of the best efforts of historians of the new age. Our conception of history to-day is broader and perhaps pro-

²⁷ R. B. Dixon, *The Building of Cultures* (New York, 1928), 262.

²⁸ G. A. Dorsey, "Race and Civilization," in *Whither Mankind*, ed. C. A. Beard (New York, 1928).

²⁹ T. Esquivel Obregón, "Factors in the Historical Evolution of Mexico," in *Hispanic American Historical Review*, II, 138, 140; Cobo, *op. cit.*, II, 343.

founder (so it seems to us, at any rate) than it has ever been in the past; the facilities for investigation and study are certainly the best that mankind has ever possessed; and the time seems ripe for a careful examination of this neglected problem of cultural history. We should know more about the transit of Spanish agriculture to America, and also about its transit from one region to another in America; about the agency of the Spanish government on the one hand, and of private individuals on the other, in effecting the transfer; about the precise character of the various items in the paraphernalia of Spanish agriculture at the time of its transfer, and their modification in the New World, whether through purposeful human agency or under the influence of environment. It would also be well to inquire into the American contribution to Spanish agriculture. Many other problems will readily suggest themselves to you. Perhaps the data for such a study may prove inadequate at a few points, but for the subject as a whole there exists a mass of materials, both printed and manuscript, which, under the conditions of modern historical scholarship, are accessible to the investigator.

This is a larger theme than the subject of the present paper, but it is only when the larger theme has been elaborated that we can formulate a precise statement of the value and significance of the Spanish contribution to American agriculture.

AGRICULTURAL LEGISLATION IN COLONIAL NEW JERSEY

BY CARL R. WOODWARD¹

Contrary perhaps to the popular conception, the use of legislation in the effort to solve agricultural problems is not peculiar to modern times. Even before the white man had become established on the strip of land lying between the Hudson and the Delaware Rivers, European governments which laid claim to it gave evidence of an agrarian policy. Especially noteworthy were the efforts of the Swedes, indicated in the instructions to John Printz, commissioned governor of New Sweden in 1642, that he should give earnest attention to agriculture.²

The mercantile motive figured prominently in the settlement of the Jerseys. In several respects they were a middle ground,

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² Israel Acrelius, *A History of New Sweden; or, The settlements on the river Delaware*, in *Memoirs of the Historical Society of Pennsylvania*, XI, 30-40. (Tr. from the Swedish, with an introduction and notes, by William M. Reynolds . . . Pub. under the joint auspices of the historical societies of Pennsylvania and Delaware. Philadelphia, the Historical Society of Pennsylvania, 1874. Originally published by Harberg & Hasselberg, Stockholm, 1759).

where mingled diverse factors of natural resources, race, industry, and trade. They lay between two great waterways, early designated the North and the South Rivers. They were midway between commercial New England and planter Virginia. They formed the highway between two large ports, and themselves provided seaports that enjoyed a lucrative foreign trade. Here was a mingling of diverse European blood—Swedish, Dutch, English, Scotch and German. When in time the proprietary governments of East and West Jersey were set up, the colonial assemblies immediately enacted legislation with reference to agriculture.

Government relations with agriculture in colonial New Jersey fall into three classes: government aid and promotion; protective measures for farmer and community; and marketing regulations.

GOVERNMENT AID TO AGRICULTURE

The mother governments wanted the colonies to produce certain raw materials of commerce. The production in naval stores, fiber crops, and silk, apparently was disappointing, hence stimuli were provided in the form of bounties, premiums, and subsidies. These measures, of course, were not limited to New Jersey, but a few incidents with reference to this colony may be mentioned. Of special interest also was the suggestion that production be stimulated by educational measures.

Some effort was made by Act of Parliament early in the eighteenth century, to encourage the growing of hemp and flax.³ Apparently instructions for growing the crops were incorporated in the act, but with little effect, for in 1723, twenty "merchants and others Trading to his Majesty's Plantations in America" addressed a memorial to the Lords of Trade, complaining that the colonists were "very little if at all acquainted with the proper methods of Sowing or Curing Hemp, or of preparing trees for making tarr fitt for cordage," and humbly proposed that "some

³ *Documents Relating to the Colonial History of the State of New Jersey*, ed. by William A. Whitehead, First Series, V (1720-1737), 69. (Newark, N. J., Daily Advertiser Printing House, 1882).

person well skilled in Raising and Manufacturing the several Species of Navall Stores . . . be Forthwith appointed with sufficient power to instruct the Inhabitants,"—in other words, to play the rôle of a farm demonstrator.⁴ We have no evidence that encouragement offered by the British government through bounties resulted in any great increase in production so far as New Jersey is concerned.⁵

Steps were taken by the New Jersey Assembly in 1765, while William Franklin was governor, to promote the growing of flax, hemp and silk. It would be interesting to know whether the governor's father, Dr. Benjamin Franklin, may not have inspired the action. That the measure was promoted by the Governor appears from his letter to the British Lords of Trade April 8, 1765, in which he said, "I prevailed on the Assembly to Grant some Bounties to encourage the raising Hemp & Flax and the Culture of Silk for Exportation to Great Britain."⁶

In the preamble of the act, it was pointed out that Parliament already allowed a bounty for the importers of flax and hemp, and it was now desired to extend the encouragement to the producers. The preamble reads:

"Whereas the Parliament of Great-Britain hath thought it necessary to grant a Bounty on the Importation of Hemp, and rough or undressed Flax, into Great-Britain from the Colonies; And whereas the cultivating Mulberry Trees, will not only enable the inhabitants of this colony to go into the making of Raw Silk, for which the climate and situation of the colony are naturally adapted, which in Time it is expected may become a very valuable Article of Remittance to Great-Britain; but also great Advantages will arise to the Inhabitants from the Value of Mulberry Timber, which is found by experience to be not only durable, but very fit for Ship and Boat Building; And Whereas the said Parliamentary Bounties are to be paid only to the Importers of Flax and Hemp into Great Britain; There-

⁴ *The Official Record*, IV, 6. (United States Department of Agriculture, Aug. 19, 1925).

⁵ Carl Raymond Woodward, *The Development of Agriculture in New Jersey, 1640-1880, a Monographic Study in Agricultural History* (New Brunswick, N. J., New Jersey Agricultural Experiment Station, Rutgers University, 1927. Bulletin 451, New Jersey Agricultural Experiment Station, New Brunswick), 10.

⁶ *Documents Relating to the Colonial History of the State of New Jersey*, ed. by Frederick W. Record and William Nelson, First Series, IX (1757-1767), 491. (Newark, N. J., Daily Advertiser Printing House, 1885).

fore, to give all due Encouragement for the raising the said useful Articles of Hemp and Flax, and for the greater Encouragement to plant Mulberry Trees for the Intentions aforesaid. . . ."

The bounties offered were 4 pounds for every ton of clean bright hemp, "fit for exportation to Great Britain;" 20 shillings for 500-weight of "good bright Flax," and 7 shillings 6 pence for every additional hundred weight; and 40 shillings for every hundred mulberry trees "set out at not less than 15 feet distance, and properly secured." Applications for bounties were to be made to the colonial treasurer, with proper certificate, signed by local justices of the peace, who were required to make a thorough inspection of the crops in question. The act provided that the bounties on flax and hemp should be valid for two years, and the bounty on mulberry trees for a term of seven years. From the meagre information available, it appears that the bounties failed to accomplish any substantial results.⁷

Exemption from tariff on imports also was resorted to as a means of stimulating certain agricultural enterprises. "For the encouragement of breeding sheep," the Assembly of East Jersey passed an Act October 2, 1694, which decreed that "All Sheep shall be rate free."⁸

PROTECTION OF PERSON AND FARM PROPERTY

Bounties for wolves

A second class of legislation had for its object the protection of person and property. Wolves and panthers were a serious menace to animal husbandry, as well as a dread threat to human life, and accordingly the Assembly of East Jersey, meeting at Elizabethtown, December 2, 1675, laid a premium of 15 shillings upon the head of every wolf that might be destroyed.⁹

⁷ Carl R. Woodward, "Odd Bits of Agricultural History," *New Jersey Agriculture*, IX (Oct. 1927), 14. (Published at Rutgers College by the State University of New Jersey.)

⁸ Aaron Leaming and Jacob Spicer, *The Grants, Concessions, and Original Constitutions of the Province of New Jersey* . . . (Philadelphia, Printed by W. Bradford, printer to the king's most excellent majesty for the province of New Jersey [ca. 1752]. A reprint by Honeyman & Company, Somerville, N. J., 1881), 345.

⁹ *Ibid.*, 102.

Apparently, this act did not result in any great decrease in the scourge, and more adequate machinery for its enforcement was provided by the Assembly in 1682.¹⁰ But still the wolves abounded, and the Assembly, meeting at Perth Amboy, September 28, 1692, "finding the said 15 shillings not sufficient to encourage the destruction of Wolves," provided that "the inhabitants of each respective town where the Wolf or Wolves shall be killed" should pay 15 shillings for each wolf, and that in addition, the same amount should be paid by the county.¹¹

Meanwhile the settlers in West Jersey had been struggling with the same problem. The Assembly in session at Burlington, May 2, 1682, fixed a premium of 10 shillings for the head of each wolf presented to an officer appointed for the purpose.¹² But by 1697 the Assembly frankly admitted that this measure had failed to meet the situation. Accordingly the bounty was increased. A difference in the wolf-hunting propensities of the white man and the Indian seems to have been in the mind of the Legislators. The act reads: "Whatsoever Christian shall kill and bring the Head of a Wolf, of prey, or Panther, to any Magistrate . . . shall receive as a reward 20 shillings . . . and if by any Indian or Negro, shall receive 10 shillings after the same manner."¹³ Half a century later the wolves were still a menace, and the reward was increased to 40 shillings for every wolf, in an Act passed at Burlington in 1752.

Trespassing livestock

Trespassing livestock and the stealing of farm animals also gave the colonial settlers much concern. It was early recognized that these matters could not be left entirely to the free exercise of personal will, but that government control in some degree was necessary. The difficulty largely arose from the practice of allowing livestock free range on common lands as was customary in the old country. The East Jersey Assembly sitting at Elizabethtown

¹⁰ *Ibid.*, 261.

¹¹ *Ibid.*, 315.

¹² *Ibid.*, 448.

¹³ *Ibid.*, 557.

in November, 1668, passed an Act providing "for marking of horses and cattle." Each town as well as each owner had its distinctive mark, which was recorded in the town book.¹⁴ Animals from Bergen were designated by the letter "B"; and the corresponding brands for Newark were "N"; Elizabeth Town "E"; Woodbridge "W"; Middletown "M"; Shrewsbury "S"; Delaware "D" and Piscataque "P." It was prescribed that the brand should be placed on the buttock of horses, and on the right horn of cattle.

Mere branding, however, could hardly be relied upon either to keep farm animals out of mischief, or to prevent unscrupulous persons appropriating other men's cattle for their own use. Accordingly, the Assembly in 1675 passed an act which stipulated that no person should "have liberty to range the commons of any Town, to take up Horses, or Hogs," except within his own township, without permission from the constable, the penalty being a fine of 5 pounds.¹⁵

Two years later provisions were made for the disposal of stray animals. Any horses or neat cattle above two years of age, found straying about unmarked or unbranded, might be taken up, "to be duly cry'd three times in some public place or public occasion," with an exact description of each beast. If no owner appeared to claim them, they were to be accounted as strayers and turned over to the pound-keeper. If the owner then claimed an animal, he was required to pay 1 shilling 6 pence a week for summer pasture and 1 shilling 8 pence for winter feed during the period it was held. At the same time the detainer or finder was obliged to make good any casualty befalling such animals while in his charge.¹⁶

It was recognized that property owners also had an obligation in safeguarding their fields with proper enclosures. Accordingly, in 1676 an act was passed regulating fences, fixing the legal height of a fence at 4 feet, 3 inches. To insure the observance of this regulation the office of "viewer of fences" was created.¹⁷

¹⁴ *Ibid.*, 86.

¹⁵ *Ibid.*, 101.

¹⁶ *Ibid.*, 127.

¹⁷ *Ibid.*, 112.

Hogs, it appears, were the most obstreperous of the domestic animals, "damnifying meadows by rooting them up," and not infrequently were the cause of hard feelings between neighbors. It was decreed in 1682 that no swine should be allowed to run at large. Furthermore, anyone fortunate enough to encounter a stray porker on his property could lawfully treat himself to a supply of ham and bacon. Hogs found trespassing on one's property might be killed, one-third of the proceeds to go to the finder and two-thirds to the constable.¹⁸

Abuses in the taking up of horses called for the appointment in 1682 of a chief ranger in each county, who should take up, receive, and register strays, and receive claims for them. Horses and cattle being driven through a county were subject to registration with the chief ranger, from whom the drover was required to procure a suitable certificate.¹⁹

From 1680 to 1700 similar laws were enacted in the province of West Jersey. Usually the East Jersey Assembly was somewhat in advance of the government of the western province. The West Jersey settlers, however, early realized that scrub male animals ranging at will would be detrimental to the breed, so in 1683 an act "for preventing the spoiling of the breed of horses" was passed. Each owner was forbidden to allow a stallion "three years old and under fourteen hands high to range the woods" under a penalty of five pounds.²⁰ More stringent legislation on this matter was passed by the Assembly in 1730, authorizing the gelding of such animals when found.²¹ Similar legislation was applied on December 6, 1775, to rams running at large, it having been found by long experience "That the suffering of Rams to go at large at certain seasons of the year is of very mischievous consequence, and tends not only to injure the Breed of Sheep, but also to the introduction of Quarrels, Disputes and Lawsuits among neighbours." It was required that from August 20 to December 20 all rams must be kept within an enclosure.²²

¹⁸ *Ibid.*, 252.

¹⁹ *Ibid.*, 262.

²⁰ *Ibid.*, 475.

²¹ Samuel Nevill, *Laws of New Jersey* (1752), 199.

²² Samuel Allinson, *Laws of New Jersey* (1776), 492.

Line fences

Line fences were always a bone of contention. Conditions regulating this troublesome matter were prescribed in an act passed by the West Jersey Assembly in 1730. Such fences could be repaired by either party when the other neglected his part, and the party so repairing was to be paid for so doing, the cost to be fixed by a board of appraisers. Disputes between neighbors concerning the location of line fences might be settled by the Surveyors of the Highway on application from the person wanting the fence. A neighbor failing to maintain his portion of the fence was made liable for damages if his cattle broke through and destroyed crops in the adjoining field; but damage done by cattle belonging to the neighbor who maintained his portion of the fence, in the neglectful party's field, would not be subject to recovery, or the cattle to impounding.²³

It is interesting to note that regulatory measures in these matters gave rise to conflict between the colonial authorities and the local governmental units. In 1695 the smaller civil units objected to the regulations concerning the bounties on wolves. Presumably they believed that the bounties were not sufficiently large to insure adequate protection and the Assembly made a move toward local option. All former acts on the matter were repealed. It was explained that the methods prescribed had been found to be "a Grievance to the Inhabitants," and it was provided that the question would henceforth be left "wholly to the Discretion of each Town, Hamlet and County . . . to take what method they shall among themselves see fit for the killing of Wolves."²⁴ Likewise, after certain efforts at colonial control in the matter of stray animals in East Jersey, the restrictions against permitting swine to forage in the woods were repealed in 1686, and local option on the matter was allowed, for the reason that the former act tended "much to the impoverishment of the . . . inhabitants."²⁵

²³ Nevill, 205.

²⁴ Leaming and Spicer, 356.

²⁵ *Ibid.*, 288.

Protecting natural wealth

In this class of legislation, also, may be mentioned measures which made for the conservation of natural resources. In 1683 the West Jersey Assembly passed an act restricting the firing of woods except at certain fixed times.²⁶ The primary motive here was probably one of protection against the danger of widespread forest fires, rather than one of conserving the forests. In the first half of the eighteenth century, however, the Assembly took action to protect standing timber.²⁷ All persons were forbidden to cut trees for poles, pipe staves, or barrel staves, or to bore for turpentine without the consent of the owner. Furthermore, the exportation of pipe staves and barrel staves was discouraged by laying a duty of 20 shillings on every 1000 hogshead staves and 30 shillings on every 1000 pipe staves shipped to other colonies.

The danger of depleting the natural oyster beds in the shallow waters of the Jersey coast, also, was early recognized and regulations concerning the time of taking up oysters, and prohibition of the burning of whole oysters for lime, were enacted in 1719,²⁸ and further in 1775.²⁹ Of a similar nature was an act "for the preservation of cranberries" passed in 1789 which prohibited the gathering of cranberries on common lands between the first of June and the tenth of October.³⁰

MARKETING LEGISLATION

Fairs and markets

The marketing of farm products also came in for its share of government encouragement and control. Among the first acts of the assemblies of both East and West Jersey were measures providing for public markets and fairs. A market was established at Burlington in 1681, at Salem in 1682, at Perth Amboy in 1686. Other sites of colonial fairs and markets were Woodbridge,

²⁶ *Ibid.*, 476.

²⁷ Nevill, 15.

²⁸ *Ibid.*, I, 86.

²⁹ Allinson, 475.

³⁰ *New Jersey Statutes* (1789), 516.

Princeton, Greenwich, Trenton, New Brunswick, Elizabeth, and Newark.³¹ Markets were to be held one, two, and sometimes three days a week; fairs of two days' duration were semi-annual, occurring usually in May and in October. The fairs were of the old European type, primarily for the exchange of goods. As prescribed in the law, all persons were at liberty to "buy and sell all manner of lawful goods, wares and merchandise." It was provided that all persons should be free from arrest on fair days and for two days previously and two days after a fair, except for breach of peace. These fairs continued with varying success for a century. Some were discontinued for a time and later revived. Others were abolished by law for abuse of privileges.³² Efforts were made through legislation to control the selling of liquor and gambling, and also horse racing, which early became an attractive feature of the fairs.

In 1748 horse racing for "lucre of gain" was prohibited by act of Assembly, except at fairs and on the first working days after Christmas, Easter, and Whitsuntide.³³ Corruption, however, seems not to have disappeared, and in 1761 all races were abolished except under special permission by the magistrate, it being recognized "that improvement of the breed of horses might be a matter of consequence."

Trade regulations

New Jersey also furnishes an early example of standardization and government inspection of agricultural exports strikingly similar in principle to the extensive system of marketing supervision in effect today. Such questions as a legal medium of exchange, standard weights and measures, and government

³¹ Leaming and Spicer, 433, 453, 518, 537.

³² *Documents Relating to the Colonial History of the State of New Jersey*, ed. by William Nelson, First Series, XXVIII, 282. (Paterson, N. J., The Call Printing and Publishing Co., 1916. Sub-title: Extracts from American Newspapers, Relating to New Jersey, IX (1772-1773)).

³³ William A. Whitehead, *Contributions to the Early History of Perth Amboy and Adjoining Country, with Sketches of Men and Events in New Jersey during the Provincial Era* (New York, D. Appleton & Company, 1856), 305-307.

inspection and certification, were given thoughtful attention in the early years of the colony. They are also suggestive of the trade guild regulations of mediaeval Europe.

The East Jersey Assembly in 1675 passed an act fixing the standard units of exchange.³⁴ Inasmuch as the trade was largely in barter, with a bushel of grain sometimes used as the standard, the Assembly placed a valuation on the main commodities. For example, winter wheat 5 shillings a bushel; Indian corn 3 shillings a bushel; pork 3 pence a pound or 70 shillings a barrel; tobacco 4 pence a pound; etc. A few months later the Assembly decreed that the salary for the Governor to be collected by the constables of the respective towns should be paid in "good Merchantable Pease and Wheat, or if any Town will pay in Tobacco not less than a Hogshead," and named the standard prices at which these products were to be rated.³⁵ In 1676 the Assembly adopted the English standard of weights and measures, including the bushel and the gallon, as the standards for the province.³⁶ Official inspectors of weights and measures were provided. The West Jersey Assembly, meeting at Burlington in 1681, passed a similar measure.³⁷

Government control of the packing industry may be traced back as early as 1676 when the East Jersey Assembly provided for the supervision of the sale of salt beef and pork. The statute is of sufficient interest to quote:

"There shall be in every Town, a Packer Chosen by the Freeholders, to see that all Meat in Barrels for Sale be good and merchantable, and Well Packed and Salted, and to contain Thirty-two Gallons, and having put his mark upon the Cask or Barrel, the same to be accounted merchantable, which Packer is to be upon Oath, and to see that the Cask be good and well seasoned Timber, and the Cooper's Mark thereon, and to have for his Pains for Packing and Marking of every such Barrel, Eight pence."³⁸

The West Jersey Assembly passed a similar act in 1685, "for the avoiding of mischief," stating that "the Inequality of Beef and

³⁴ Leaming and Spicer, 102.

³⁵ *Ibid.*, 119, 125.

³⁶ *Ibid.*, 116.

³⁷ *Ibid.*, 433.

³⁸ *Ibid.*, 116.

Pork Barrels, and ill ordering and Management of Provisions exported, hath been highly injurious to traders, and the Reputation of this Province, and consequently detrimental to the Increase of Trade therein."³⁹

It appears, however, that the inspection service was not wholly effective. Abuses continued unnoticed and unpunished. So in 1725, the Assembly meeting at Perth Amboy passed a law more specific and less easy of evasion, and presumably with some teeth in it, observing that "Many frauds and deceits have happened." The requirements and specifications concerning the size of package and quality of the product were given in greater detail, a penalty of 5 shillings per barrel was provided for each offense, the fee of the packer was raised to 9 pence per barrel, and the initials "N. J." were to be branded on each barrel of salt pork and beef. Thus was the "New Jersey" brand of pork and beef officially established. Still the system proved not to be "airtight," and amendments were made from time to time. On March 11, 1774, a revised bill was passed, stating that previous legislation "to prevent Abuses in the Packing of Beef and Pork, etc., does not answer the good Purposes Intended." The legal weight of a barrel of salt meat was named—210 pounds for pork and 220 pounds for beef, and the fee of the packer was placed at 1 shilling per barrel. Only "sound and merchantable meat, well cured with salt and pickle," was to pass inspection. Shipments to New York were excepted.⁴⁰

Leather, also, came under government inspection in East Jersey in 1676, and in West Jersey seven years later, with the creation of the office of "sealer of leather."⁴¹

The trade in grain and flour likewise was the subject of legislation. Millers, it seems, did not always deduct their toll from the grist to the satisfaction of their patrons. Consequently, in 1696, the West Jersey Assembly decreed that no miller, under the

³⁹ *Ibid.*, 508.

⁴⁰ Allinson, 450.

⁴¹ Leaming and Spicer, 117.

penalty of a fine, should take more than one-tenth of "any manner of corn or grain," as pay for his services.⁴²

Exportations of flour were placed under inspection by a law passed in 1752, which provided that no merchant should export wheat flour except for Pennsylvania or the Province of New York, unless each cask was inspected, and certified with the official brand "New Jersey." The fee of the inspector was 1 penny a cask and each cask was to bear his initials. A penalty of 20 shillings a cask was named for each offense.⁴³

Exported grain came in for inspection under an act of the Assembly in 1772, covering shipments of "All Wheat, Corn, Rye and other Grain." The inspector's fee was 2 shillings 8 pence per hundred bushels, one-half to be paid by the seller, and one-half by the purchaser. Inspection, however, was not mandatory, and was made only when either the seller or the purchaser applied for it. The regulation, moreover, did not affect shipments to the neighboring colonies.⁴⁴

For the protection of the consumer, the West Jersey Assembly in 1696 took action for "regulating the Assize of Bread," observing that, "there hath been great abuses and irregularities committed by Bakers in not observing the due Assize of Bread." The legal loaf was fixed with a sliding scale of legal weights for the penny loaf in proportion to fluctuations in the price of wheat. Different grades of bread, also, were recognized.⁴⁵

CONCLUSION

This paper is essentially a survey rather than an analysis of agricultural legislation in colonial New Jersey. It opens the way for further study of the causal factors.

By way of general observation, it appears that most of the laws were enacted to meet some economic condition, and therefore their full significance is revealed only against their economic background.

⁴² *Ibid.*, 545.

⁴³ Nevill, 445.

⁴⁴ Allinson, 381.

⁴⁵ Leaming and Spicer, 545.

It is interesting to find that questions of government aid and government control of agricultural enterprises may be traced back to the very beginning of the colony—in which point, doubtless, New Jersey is not unique. It will be observed, also, that much of the legislation fell short of its objective, and that legislative problems of colonial agriculture were in principle not far removed from questions with which present-day legislatures are struggling.

THE HENRY C. MERCER MUSEUM

BY BERNHARD OSTROLENK

The title of this paper is inaccurate only in that the official name of the museum which I am describing is "The Museum of the Bucks County Historical Society." This rather lengthy and localized name is wholly misleading as a description of the museum at Doylestown, Pennsylvania. Dr. Henry C. Mercer, the founder and curator of the museum, can not be divorced from this extraordinary contribution to science. He is in no sense a conventional man; hence his museum, either in spirit or in type of collections, conforms to no orthodox ideas of the historical museum or what its official name would lead one to expect.

The very building is a unique piece of architecture. It was designed and built under the supervision of Dr. Mercer. I refrain from description in the hope that this paper will arouse sufficient interest for students in industrial and agricultural history to treat themselves to the surprise in store for them when they visit and study this collection. As Dr. Mercer has said, it "was built for the collection while the collection was not built for it."¹

The collection is one that seeks to explain human development by means of exhibits of tools. How did man saw wood during the days of Nero? What was the predecessor of the plow of today? How was grain harvested in Cato's day? How did man satisfy his primary needs of food, shelter, and clothing during the long history prior to the descent on us of the Industrial Revolution? It is the tools that aided man in his effort to adjust himself to life which have interested Dr. Mercer. His collection is rich in the simple tools that man has used for ages.

The tools collected have an arbitrary time limit. They do not

¹ All quotations in this paper are from pamphlets, addresses, and other prints by Dr. Henry C. Mercer, the curator of The Bucks County Historical Museum at Doylestown, Pennsylvania.

illustrate the industries of today but stop at what might be called the scientific gap between the past and the present, namely the so-called Industrial Revolution when, soon after 1820, the steam engine and the innumerable machines which have since transformed human life came to be recorded in the Patent Office and described in print. Except for purposes of comparison the objects have been collected in the United States, chiefly in Pennsylvania, but a short study of them will soon convince us that the collection is not local or even national but international.

"Abundant evidence shows that though made in America these tools of the eighteenth century were not invented here but represent long existing types of world-wide use brought here by the colonists.

"Still more surprising seems the fact that a large proportion of them have remained unchanged in construction since Roman times."

This last comment as expressed in the collection is extremely important. In the museum we see sickles used universally on the American farms only fifty years ago in virtually the same shape as those used by Moses. The hand mill or quern was used by Pennsylvania farmers in much the same form as in the days of Sampson. Pliny describes a grain harvester consisting of a wooden, serrated comb, supported at both ends by wheels and pulled by either man or horse, with a box behind the teeth to catch the grain as it is broken over the teeth by means of a rake. Here is the exact implement subsequently used by Bucks County farmers as a clover huller, an implement that was no doubt the forerunner of the modern mowing machine and grain harvester.

The collection then fills the gap between the modern industrial museum and archaeological museums which, if paying any attention to tools at all, are largely confined to the rare discoveries in excavations of habitations of ancient people. The tools here collected are modern in date but very old in type. "Because these eighteenth century tools are often identical in construction with Roman, Greek, Assyrian, Egyptian, and Chinese tools they immediately throw new light on the study of archaeology."

Students of agricultural history will find the spirit that animates the collection as well as the collection itself fascinating. It is classified by Dr. Mercer into the primary and secondary historic

human tools. Under the classification of primary human tools, for instance, there are the tools used for securing food. Under the subheading, animal foods, are the tools by which domestic animals were kept in captivity,—chains, branding irons, yokes, cow bells, jumping sticks, nose rings, horn combs, hog catchers, nest eggs, bee gums, and coops. In another stall we see how our ancestors extracted the juice of the wild maple tree. We see the tools used for the culture of seed,—shovels, hoes, forks, drills, rakes, and plows with wooden moldboard. Another section has the tools for harvest,—scythes, sickles, cradles, flails, winnowing vans, riddles, husking pins, and corn shellers. Here are the grain fans introduced into Great Britain from Holland in 1715 and brought to this country in 1815 and surviving in later models on the Pennsylvania farms to this day. The winnowing van—a sort of shovel-shaped basket in which the grain and chaff are thrown up, the chaff being blown away—is mentioned in the Bible, is described by Cato, and was in daily use on Pennsylvania farms a decade ago. Another section shows the tools for the reduction of grain,—the pestle and mortar, the hand mill or quern, the water pestle, the water-run gristmill in its simple form as first used in North Carolina, and the later more complex forms with counter-gearings and vertical wheels.

It must be reiterated that these tools constituted the aids of man for thousands of years. The flail here shown is modern in make but comes to us in type from unknown antiquity. As the Industrial Revolution descended on us with its momentous changes it swept these tools away. Almost overnight the tools used in farm and building operations for generations were in danger of being completely obliterated. Dr. Mercer recognized the historic value of these tools and deplored their disregard by the scientists who mistakenly felt that their lack of modern use precluded their having scientific value. Many of these tools are all but lost. Even now their collection presents obstacles and problems. The larger portion of these tools have happily been rescued by Dr. Mercer, at least in type. A large portion of the museum is excellently classified and labeled, a never ending task to the tireless industry of its curator.

These tools have greater historic value than any modern industrial museum can have. For two thousand years man did without the telegraph, the telephone, the steam engine, the trolley, the airship, and the radio, but not without the fork, the hoe, the sickle, and the plow. "Modern machinery has masked many of these antique implements, but here they are, handmade and homemade as our ancestors still used them one hundred and fifty years ago." Modern machines represent only a very small portion in the historic life of man compared to the period during which these tools were used virtually without change. These tools do not represent a historical adjunct to glorify the present. Such a use of them can only distort history.

BOOK REVIEW

THE DEVELOPMENT OF AGRICULTURE IN NEW JERSEY, 1640-1880.

By Carl Raymond Woodward. Published by the New Jersey Agricultural Experiment Station. Bulletin 451. New Brunswick, New Jersey, 1927. Pp. 321.

The author of this monograph states that it has been his purpose "to determine, to describe, and in some degree to evaluate, the educational influences, both formal and informal, that have affected the development of agriculture in New Jersey;" he believes "that the facts here given indicate in a fairly substantial way the principal events and trends of agricultural education in the state during the period in question;" and he expresses the hope that his investigation "may serve as a starting point for further, intensive studies."

Among the subjects treated in this volume may be mentioned agricultural progress in early colonial times; agricultural leaders in the eighteenth century; early agricultural fairs and societies; the beginning of an agricultural literature; the newspaper as an educational agency; agricultural periodicals; agriculture in the schools; local societies and clubs; agricultural legislature; the New Jersey State Agricultural Society, the State Board of Agriculture, and other state agricultural organizations; the State College of Agriculture; and the agricultural experiment station. The author concludes the study with a review of education and agricultural progress in which he expresses the conviction that "The intellectual status of the farmer has been profoundly affected by the educational influences that have been developing since the beginning of the state's history."

The author had made use of a wide variety of source materials, including almanacs, newspapers, agricultural periodicals, annual reports of New Jersey State Board of Agriculture, and the Proceedings of the New Jersey State Horticultural Society. The "source materials have been freely quoted" and numerous illus-

trations from contemporary publications have been added. A general bibliography, an appendix listing the source materials, and an index are also provided.

In the preparation of this volume the author has displayed the zeal of the antiquarian, with the result that he has brought together a great deal of interesting and valuable material, which is, however, poorly arranged. It is, moreover, descriptive rather than interpretative. The volume is in no sense an economic history of agriculture in New Jersey; nor is it intended to be such. Even so, however, the author has made a contribution to the history of agricultural literature which is distinctly worth while.

LOUIS BERNARD SCHMIDT.

Iowa State College, Ames, Iowa.

NEWS NOTES AND COMMENTS

THE AGRICULTURAL HISTORY SOCIETY

The Agricultural History Society met concurrently with the American Historical Association and other historical societies in Indianapolis on December 28, 29, and 31, 1928. Mr. Herbert A. Kellar of the McCormick Agricultural Library in Chicago acted as chairman at the joint session of the Agricultural History Society and the American Historical Association on Saturday morning, December 29. At this session Arthur Preston Whitaker, professor of history at Western Reserve University, read a paper on the Spanish Contribution to American Agriculture; Earle D. Ross, professor in the department of history and government in the Iowa State College of Agriculture and Mechanical Arts, a paper on Lincoln and Agriculture; and Ernest S. Osgood, instructor in history at the University of Minnesota, a paper on the Cattleman in the Agricultural history of the Northwest. St. George L. Sioussat, professor of American history at the University of Pennsylvania, who was to read a paper, entitled *The Breakdown of Royal Land Management in the Southern Provinces, 1773-1775*, at the Agricultural History Society luncheon was unable to be present because of serious illness in his family. A summary of his paper was given at the joint session. The editorial board of the society expects to publish all of these papers in forthcoming issues of *AGRICULTURAL HISTORY*.

The twelfth annual meeting of the Agricultural History Society will be held at a dinner at the Cosmos Club in Washington, D. C., on the evening of April 29, 1929. Dr. L. O. Howard, chief of the Bureau of Entomology, U. S. Department of Agriculture, will speak of the history of economic entomology as related to changes in agriculture. Professor Solon J. Buck, president of the Agricultural History Society, will also speak, probably on the possibilities for research in the field of agricultural history.

The Agricultural History Society has recently received an encouraging letter from Major William M. King, past master of Potomac Grange No. 1, Washington, D. C. He inclosed a reprint of an editorial by Charles M. Gardner from the National Grange monthly on a letter written in July, 1855, by William Saunders, the first master of the National Grange and one of its group of seven founders, which appeared in the American Farmer. The letter shows Mr. Saunders' vision of a farm organization and its possibilities of service.

PERSONAL

Mr. Russell H. Anderson of the University of Illinois has recently discovered valuable records pertaining to the agricultural history of Illinois before 1870. Among these may be mentioned, Letterbooks of M. L. Dunlap, Huegely Milling Records of Nashville, Illinois, and Correspondence of Dr. John A. Kennicott.

Solon J. Buck, president of the Agricultural History Society, has a biographical memoir of the late Professor Alvord under the title *Clarence Walworth Alvord, Historian* in the December number of the Mississippi Valley Historical Review. A *Bibliography of the Published Works of Clarence W. Alvord*, compiled by Professor Buck, is printed in the same issue.

Miss Kathleen Bruce, professor of American history at the College of William and Mary, has obtained a year's leave of absence and is engaged in making an extensive study of Progressive Planters in Virginia before 1860.

Oliver E. Baker, senior agricultural economist in the United States Department of Agriculture, has an article entitled *Population, Food Supply, and American Agriculture* in the Geographical Review for July, 1928.

Professor E. E. Dale, head of the history department of the University of Oklahoma, will teach for six weeks during the coming summer at the College of William and Mary.

Archer Butler Hulbert, director of the Stewart Commission on Western History of Colorado College, Colorado Springs, Colorado, has completed the manuscript of a volume entitled *The Soil Factor in American History: with Special Reference to Expansion and the Scientific Study of Local History*.

Ernest S. Osgood, who presented a paper on the Cattleman in the Agricultural History of the Northwest at the joint session of the Agricultural History Society and the American Historical Association, has a volume announced for publication in the near future by the University of Minnesota Press under the title, *The Day of the Cattleman: A Study of the Northern Range, 1845-1890*. It is described as "The story of the first effort to utilize the High Plains as a region where men could make a living, rather than merely cross as quickly as possible on the way to the mines in the mountains. What the cotton planter was to the South or the wheat and corn farmer was to the Middle West, the cattleman was to the High Plains. He laid the basis for the economic community that grew up there. He also developed a body of range customs and rights, extra-legal and often illegal but with all the force of law because of the organizations backing them. To these organizations the author has given much attention and has used manuscript and other materials hitherto inaccessible or little used, for example, the large and important collection in the office of the Wyoming Stock Growers' Association at Cheyenne. The passing of the cattleman's frontier is also dealt with at length with extensive use of the reports of railroads, boards of trade, corporations and associations, local newspapers, and other contemporary material. A brilliant and frequently dramatic account of the economic and social origins of an important section of the Northwest."

In addition to the essays presented at the sessions of the Agricultural History Society at the Indianapolis meeting of the American Historical Association, Louis Pelzer of the State University of Iowa read a paper upon *Losses and Profits on Western Cattle Ranges*.

Ulrich B. Phillips, professor of American history at the University of Michigan, has been awarded the prize of \$2,500, in addition to book royalties, offered by Little, Brown, and Company for the best unpublished manuscript upon American history. Professor Phillips' book entitled *Life and Labor in the Old South* is announced for publication in May. Much of it is concerned with the agricultural development of the ante-bellum South. Original in content and interpretation, and brilliant in presentation, this work is likely to become a classic in its field. James Truslow Adams, Worthington C. Ford, and Allan Nevins were the judges who made the award.

Under the title, *Wisconsin Man Visits an English Fair*, in The Wisconsin Farmer for October 18, 1928, Dr. Joseph Schafer, superintendent of the Wisconsin State Historical Society, tells of his impressions of the famous agricultural show at Cheshire, England, which he attended on August 29, 1928.

Professor Louis Bernard Schmidt, head of the Department of History and Government at the Iowa State College, will return to the University of Alabama for the first term of the summer session of 1929 to give courses in The Westward Movement in American History, History of the United States from 1829 to 1865, and The United States in World Politics since 1895.

AGRICULTURAL HISTORICAL MUSEUM AT SYRACUSE, NEW YORK

The New York State Historical Association Quarterly Journal for October, 1928 (p. 444-445) contains an interesting account of the new Agricultural Historical Museum building, erected on the State Fair Grounds at Syracuse, New York, and dedicated on August 30, 1928, Governor Alfred E. Smith, being the chief speaker.

COMMENTS ON BOOKS AND ARTICLES

Professor Charles A. Beard's article, *Culture and Agriculture*, in the Saturday Review of Literature for October 20, 1928, is an interesting and thought-provoking essay on what may be termed the agrarian thesis.

Tenny Frank's article, *Recent Work on the Economic History of Ancient Rome* in *The Journal of Economic and Business History* for November, 1928, affords a critical evaluation of and convenient key to the recent publications on Roman history, many of which contain material on Roman agricultural history.

Slavery in the Roman Empire (Methuen, 1928), by R. H. Barrow, is readable and reliable, although not very original. The chapters on the slave in agriculture and in the household and the discussion of manumission are excellent.

In M. Raymond Billiard's *L'Agriculture dans l'Antiquité d'après les Géorgiques de Virgile* (Paris, E. de Boccard, 1928) the *Georgics* of Virgil are considered as a treatise on the agriculture of antiquity, presented in poetic language, by a man who was a farmer and the son of a farmer and who had a personal acquaintance with the agricultural science of his day. The poet's observations on climate and soil, crop rotation, the cultivation of wheat, of vines, of olives, livestock raising, bee culture, and other subjects are collected and discussed. The volume is a methodical study of agricultural science as it was known to Virgil.

Economic Aspects of Indigenous American Slavery, by William C. Macleod, appears in the October-December number of the *American Anthropologist*.

H. J. Spinden's *The Population of Ancient America* in the *Geographical Review* for October, 1928, has a few paragraphs on Indian agriculture, including the statement that about four-sevenths of the agricultural production of the United States today (farm values) is in economic plants domesticated by the American Indian.

Hunger Fighters, by Paul de Kruif and published by Harcourt, Brace and Company, is written in the same style as the author's previous book, *Microbe Hunters*. It contains enthusiastic chapters on a dozen scientists who are called hunger fighters, as

their discoveries either provided more food or controlled the diet deficiency diseases which the author calls the hidden hunger. Among these scientists are Mark Alfred Carleton, who brought the wheat called the Kubanka durum from the Turgai Steppe in Siberia and Kharkof wheat from Starobielsk, Russia, to grow on the dry Great Plains, of the United States, Angus Mackay, the breeder of Marquis wheat, William Saunders, first head of the Canadian Experiment Stations, Marion Dorset, who found a serum for hog cholera, John R. Mohler, chief of the Bureau of Plant Industry of the United States Department of Agriculture, Edward Francis, George Harrison Shiell, George Hoffer, Stephen Moulton Babcock, Harry Steenbock and Joseph Goldberger. Several of the articles included were previously published in the *Country Gentleman*.

A History of Agricultural Extension Work in the United States, 1785-1923, by Alfred Charles True, specialist in State Relations Work, has recently been published by the United States Department of Agriculture as Miscellaneous Publication No. 15. Doctor True entered the Department of Agriculture in November, 1888, as a special agent to prepare a report on the agricultural colleges and experiment stations for the Paris Exposition. He became Editor of the Office of Experiment Stations in 1889, Vice-Director in 1891, and Director in 1893. He held this latter position until 1915 when the federal Office of Experiment Stations and the two federal offices of extension work, the Office of Home Economics, and the Division of Farmers' Institutes and Agricultural Instruction were merged to form the States Relations Service of the Department of Agriculture. Doctor True was made Director of the Service and held this position until the abolition of the Service on June 30, 1923, at the time of the reorganization of the Department's extension work. This *History of Agricultural Extension Work* which has just been published is supplementary to another monograph by Doctor True, on the *History of Agricultural Education in the United States* which is soon to be published as Miscellaneous Publication No. 36. Doctor True also has a third monograph in preparation; it is a *History of Agricultural*

Research in the United States. In making permanent the records of the history and development of agricultural teaching, research, and extension work in the United States, Doctor True has rendered a very great service.

The Sub-Treasury: A Forgotten Plan for the Relief of Agriculture, by John D. Hicks, head of the History Department of the University of Nebraska, in the December 1928 number of the Mississippi Valley Historical Review is a chapter on the history of Populism.

Food, Drug and Insecticide Administration, Its History, Activities and Organization, by Gustavus A. Weber, has just been published by the Johns Hopkins Press, Baltimore, as No. 56 in the series of Service Monographs of the United States Government issued by the Institute for Government Research. An extensive bibliography is included.

Number 52 in the series of Service Monographs of the United States Government is *The Bureau of Chemistry and Soils, Its History, Activities and Organization*, by Gustavus A. Weber. The appendix includes an extensive bibliography.

The Development of Governmental Forest Control in the United States by Jenks Cameron and published by the Johns Hopkins Press, Baltimore, 1928, is a recent volume of the Studies in Administration series issued by the Institute for Government Research, Washington, D. C. A twenty-five page bibliography is included.

Nathan Fine's *Labor and Farmer Parties in the United States, 1828-1928* (Published by the Rand School of Social Science, 7 East 15th Street, New York City, 1928) contains chapters on The Irrepressible Conflict; Grangers, Greenbackers and Populists; Non-partisan League and Farmer-Labor Party; and The Conference for Progressive Political Action.

Marketing: A Farmer's Problem (Macmillan Company, 1928) by Benjamin F. Goldstein, member of the Chicago Bar, traces the history of the marketing of grain from 1828 to the present time.

The Grain Trade During the World War, Being a History of the Food Administration, Grain Corporation and the United States Grain Corporation, by Frank M. Surface, economist for the United States Grain Corporation, has just been published by the Macmillan Company, New York.

Many who know of John Taylor of Caroline as an agricultural reformer of the early nineteenth century will be interested in Benjamin F. Wright's article, *The Philosopher of Jeffersonian Democracy* in the American Political Science Review for November, 1928. It is a study of John Taylor's political ideas.

Founding of the Old Georgetown Market, by A. K. Parris, is included in the records of the Columbia Historical Society, Washington, D. C., vol. 29-30, edited by John B. Lerner (Washington, 1928).

The October number of the North Carolina Historical Review includes the first installment of *Twelve North Carolina Counties in 1810-1811*, a group of sketches by various people on certain counties scattered over the State, which at the instance of the Raleigh Star, were prepared for publication about 1811, but remained in manuscript until the present time. A. R. Newsome has provided an introduction for the sketches.

The December issue of the Wisconsin Magazine of History presents an interesting reminiscence of *Early Grain Binding Devices* by E. R. Jones of Madison, Wisconsin. Articles on the same subject have also appeared in December and February issues of the Beloit (Wisconsin) Daily News.

Those interested in the history of forestry will find parts of *Christopher C. Andrews: Recollections, 1829-1922*, edited by his

daughter, Alice E. Andrews, and published by Arthur H. Clark Company, of interest. Mr. Andrews did much, first as a public-spirited citizen and later as an official, for scientific preservation of the forests of Minnesota.

An account of the Non-partisan League under the title, *Independent Political Action in Minnesota*, by H. G. Teigan, appears in the American Federationist for August, 1928.

Farming in Iowa in the Sixties; Machine Methods and Cheap Land Brought High Production and Low Prices, by Louis Bernard Schmidt, is in Wallaces' Farmer for November 16, 1928.

The Cattle Roundup, by Eugene Williams, is included in the October number of the Colorado Magazine. Mr. Williams was engaged in the cattle business from 1871 to 1886. He helped to organize and was the first president of the Old Time Cowboys Reunion Association.

A History of Aberdeen-Angus Cattle with Particular Reference to their Introduction, Distribution and Rise to Popularity in the Field of Fine Beef Production in North America, by Alvin Howard Sanders, has recently been published by The New Breeders' Gazette, Chicago.

A History of Cavalry Horses, by Captain George L. Caldwell, is included in the Cavalry Journal for October, 1928.

The Equine F.F.Vs, a study of the Evidence for the English Horse Imported into Virginia Before the Revolution, by Fairfax Harrison, has been privately printed by the Old Dominion Press, Richmond, Virginia.

Economic Sectionalism in Canada: The Problem of the Maritime Provinces, by William A. Robertson, appears in the Journal of Political Economy for August, 1928.

In *Some Physical Controls in the Economic Development of the Prairie Provinces*, in *Geography*, Spring, 1928, Ll. Rodwell Jones gives an account of the economic development of the Prairie Provinces based on an analysis of geographical conditions.

The Seigniorial Régime in Canada, by D. A. Heneker, (Quebec, Proulx, 1927) is a survey of the seigniorial régime beginning with a description of the feudal background in France and tracing the various changes throughout the French régime and prior to its abolition in 1854. It includes a large number of valuable illustrative documents and apparently supplements Professor William Bennett Munro's monograph on minor points.

Under the title *The St. Lawrence Waterway in the Nineteenth Century*, George W. Brown, professor in the Department of History of the University of Toronto and associate editor of the *Canadian Historical Review*, gives an account of the historical background of the proposed further canalization of the St. Lawrence. The article is in *Queen's Quarterly*, for Autumn, 1928.

The Fall of the Planter Class in the British Caribbean, 1763-1833, by Lowell Joseph Ragatz, has been published for the American Historical Association through its Revolving Fund by the Century Company. It is an expansion of a University of Wisconsin doctoral dissertation which was awarded the Justin Winsor prize of the American Historical Association in 1926. Part I is on the old plantation system; Part II is on the decline of the Sugar Islands. A map of the West Indies and Central America, 23 statistical charts, and an extensive bibliography are included.

The Notes and Documents Section of the *Journal of Economic and Business History* for November, 1928, includes *Letters from a Sugar Plantation in Nevis, 1723-1732*, edited by Edwin F. Gay. The letters are from a manuscript letterbook containing interesting correspondence relating to the West Indian sugar plantation of Sir William Stapleton recently acquired by the Harvard College Library. Twenty-four of the total of 136 letters in the letterbook deal with sugar plantations in other islands of the West Indies.

Ganaderia. Sinopsis Filosofica sobre la Ganaderia, by José Leon Suarez, in *Anales de la Sociedad Rural Argentina* for November 1, 1928, is a brief sketch of the development of the livestock industry in the Argentine Republic. A few reflections on its influences upon the country's social, industrial and commercial life are included.

An article by Helen Douglas-Irvine, *The Landholding System of Colonial Chile* is included in the *Hispanic American Historical Review* for November, 1928.

The Economic History Society (England) has recently published No. 2 of its Bibliographies and Pamphlets bearing the caption *Air-Photography and Economic History: The Evolution of the Corn-Field* by E. Cecil Curwen. This study which discusses the evolution of the corn-field in England from the late Neolithic Period to Modern Times, is a suggestive contribution to our knowledge of English agriculture, particularly in the earlier years.

The posthumous book by Sir William Ashley, *The Bread of Our Forefathers: an Inquiry in Economic History*, published by the Clarendon Press (Oxford, 1928), is a careful investigation of the cereals which have been used for bread by the British people in historic times. It is valuable to the student of agricultural history, partly because of the information it gives, but even more because of the critical comments on sources and the suggestions for further work on the subject.

Sir William H. Beveridge's *British Food Control* has recently been published by H. Milford, London, and by the Yale University Press, New Haven, as one of the publications of the Carnegie Endowment for International Peace, Division of Economics and History; Economic and Social History of the World War, British series.

Glimpses of Rural Life in Sussex During the Last Hundred Years, by Alice Catharine Day, is a pamphlet of 54 pages recently pub-

lished by The Countryman, Idbury, Kingham, Oxford, England. In the introduction, the author explains her purpose: "As the last survivor born at Hadlow of an old Wealden family, I have collected from ancient inhabitants and set down from my own memory a few notes on the village life which has now so completely passed away. Although not perhaps of startling interest, they portray a state of things which will be quite strange, and therefore interesting, to the generations which come after us."

The Journal of the Manchester Geographical Society for 1927, issued in July, 1928, is a special Lancastrian number dealing with the geographical basis of industry in Lancashire and adjacent parts of Cheshire. H. W. Ogden considers the geographical basis of the cotton industry; H. W. Barker, the towns of south-east Lancashire; H. King, the agricultural geography of Lancastria; and M. W. Fitzgerald, the Ribble Basin. Mr. King's paper relates the different agricultural activities to the types of soil met with in the region, and brings out the fact that even in agriculture Lancashire is a highly industrialized county.

G. H. Tupling's *The Economic History of Rossendale* (Manchester, University Press; New York, Longmans, Green, and Company, 1927) is a historical study of a single Lancashire valley from the time of its organization as a forest in the thirteenth century to the triumph of the factory system about the middle of the last century. Cattle raising and hunting in a medieval forest, the transition from extensive pasturage to a mixture of pasturage with arable farming, and the gradual enclosure of the forest are considered. The sections dealing with the agricultural history of the valley is based on a most comprehensive survey of the manuscript and printed sources. Because Rossendale is a distinctive soil province and had special features in its organization throughout its history the sections on agriculture are particularly important.

A Comparison of the Effects of the Black Death on the Economic Organization of France and England, by Helen Robbins, is included in the *Journal of Political Economy* for August, 1928.

The March-April, 1928 number of *Revue d'Histoire Moderne* contains a discriminating review by M. G. Lefebvre of the present state of research on the distribution of land among the various classes of French society prior to the Revolution.

Henri Sée's *La Vie Économique de la France sous la Monarchie Censitaire, 1815-1848* (Paris, Librairie Felix Alcan, 1927) includes a section on agriculture.

The Danish Folk School, Its Influence in the Life of Denmark and the North, by Olive Dame Campbell, Brasstown, N. C., with a foreword by Paul Monroe (published in 1928, by the Macmillan Company, New York) contains an interesting chapter on Agricultural Schools and Movements.

An article entitled *Allgemeiner Überblick über die heutige Lage der deutschen Landwirtschaft*, by F. Aereboe, professor in the Landwirtschaftlichen Hochschule in Berlin, in Volume I of *Strukturwandlungen der Deutschen Volkswirtschaft; Vorlesungen gehalten während des Herbst-Lehrganges 1927 der Deutschen Vereinigung für Staatswissenschaftliche Fortbildung* (Berlin, Reimar Hobbing, 1928), edited by Bernhard Harms, will interest students of German agricultural history.

An article entitled *Agriculture*, by Vladislav Brdlík, professor at the Technical High School, Prague, in *The Economist*, Czechoslovak Supplement for December 8, 1928 (published at 6, Bouverie St., Fleet Street, London, E. C. 4, England) is a brief account of post-war conditions in Czechoslovakia.

Agriculture in New Poland, by Karol Niezabytowski, in *The Polish Economist* for November, is a brief historical sketch of Polish agriculture in recent years.

An article entitled *The Progress of Land Reform in Poland* in *The Polish Economist* for December, 1928, gives an account of the parcellation of large landed estates in Poland since its resurrection in 1918.

Russia: Territory and Population, a Perspective of the 1926 Census, by Benjamin Semenov-Tian-Shansky of the State University and Central Geographical Museum in Leningrad, in the *Geographical Review* for October, 1928, contains material, including ten maps, of great interest and value to agricultural historians.

S. A. Pervushin's article on *Cyclical Fluctuations in Agriculture and Industry in Russia, 1869-1926*, in the *Quarterly Journal of Economics* for August, 1928 (v. 42, p. 564-592) is a summary of certain materials in his book, *The Business Conjunction*.

An interesting sketch of the history of the olive in North Africa from early times, and of the great development which its culture has attained in recent years, is given by Mm. Payen and Ladreit de Lacharriere in the *Renseignements Coloniaux*, 1928, No. 6.

La Coopération Agricole en Égypte, (Dijon, J. Bernigaud et Privat, 1926) by Ahmed Midhat, is a brief outline of the history of cooperation in Egypt, a discussion of the foundation and organization of cooperative societies, and the text of the law of 1923 regulating Egyptian cooperative societies.

H. Martin Leake's *Land Tenure and Agriculture Production in the Tropics* (Cambridge, W. Heffer & Sons, Ltd., 1927) gives an authoritative and scholarly review of the land systems of India, with which the author is most familiar. The book also includes material on the land tax and agricultural education.

The Development of Indian Agriculture, by Albert Howard and Gabrielle L. C. Howard (London, Oxford University Press, 1927), states the conditions of the central problem of agriculture in India, what has been done towards its solution since Lord Curzon initiated the first scientific investigations, and what remains to be done.

K. Asakawa is the author of *Agriculture in Japanese History: A General Survey* in *The Economic History Review* (London) for January, 1929.

Systems of Land Tenure in China, by Yü Tseht'ang, appears in the Chinese Social and Political Science Review for October, 1928. It is an account of the attitude of the Chinese government towards agriculture during the different periods since 2800 B. C., and an outline of various forms of land tenure, including a discussion of government ownership, of private ownership and of the coexistence of public and private ownership. This review is published by the Chinese Social and Political Science Association, Peking (Peking), China.

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Libraries

- Columbia University, New York City.
 University of Idaho, Moscow, Idaho.
 North Dakota Agricultural College, State College Station, Fargo, North Dakota.
 University of Oregon, Eugene, Oregon.
 State College of Washington, Pullman, Washington.
 Michigan State Agricultural School, East Lansing, Michigan.
 Food Research Institute, Stanford University, California.
 University of Minnesota, Minneapolis, Minnesota.
 Indiana State Library, Indianapolis, Indiana.
 Experiment Station, Utah Agricultural College, Logan, Utah.
 University of California, Los Angeles, California.
 Amherst College, Amherst, Massachusetts.
 School of Agriculture, Cambridge, England.